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COMPENSATION CIRCUIT AND METHOD TO COMPENSATE NONLINEAR DISTORTIONS OF AN A/D CONVERTER

BACKGROUND OF THE INVENTION

The invention relates to the field of analog-to-digital signal conversion, and in particular to a compensation circuit to compensate nonlinear distortions of an analog-to-digital (A/D) converter.

A/D converters are a critical component in integrated circuits having mixed signal processing (i.e., analog and digital signal processing). Requirements related to the linearity of the A/D converter are quite difficult to achieve given the usual tolerances for analog components. The measures required for this purpose in the area of analog design entail high cost and/or high current consumption by the circuit.

In order to prevent nonlinear distortions in the analog-to-digital conversion process of the A/D converter, compensation circuits are employed to compensate for these nonlinear distortions of the A/D converter. The compensation circuits have an analog signal input, and are typically located on the input side of the A/D converter.

There is a need for a compensation circuit that compensates for nonlinear distortions of an A/D converter, and requires a simplified overall analog design together with, preferably, reduced current consumption.

SUMMARY OF THE INVENTION

A compensation circuit to compensate for nonlinear distortions of an A/D converter may include a signal input and a compensation circuit composed of digital circuit elements to digitally compensate for the nonlinear distortions, the signal input as the compensation input being a